

ABSTRACT

A pump system containing no external parts or valves is provided. The pump system is characterized by a common type of actuating mechanism and incorporates reversibly expanding actuators, preferably electroactive actuators. Fluid is caused to move at a selected flow rate and direction by sequentially activating contiguous actuators located inside the pump. The pump may be used to pump a variety of fluids and may be used in various industrial, commercial, medical, aeronautical, or military applications.